



DEVELOPMENT OF GRADE LEVEL ASSESSMENT TOOL IN SOCIAL SCIENCE (GLAT-SS) FOR GRADE VII & VIII BASED ON KARNATAKA STATE EDUCATION BOARD FOR TYPICALLY DEVELOPING CHILDREN AND CHILDREN WITH HEARING IMPAIRMENT

*Dr. Alok Kumar Upadhyay¹, Mr. RajKumar R.², Ms. Sowmya N. S³, Mr. Deepak Kumar⁴

¹ Associate Professor in Disability Studies, School of Continuing Education (SOCE), Indira Gandhi National Open University (IGNOU), New Delhi (Corresponding Author)

² Special Educator, All India Institute of Speech & Hearing, Mysore

³ Project Research Officer, All India Institute of Speech & Hearing, Mysore

⁴ Project Research Officer, All India Institute of Speech & Hearing, Mysore

ABSTRACT

The aim of the present study was to develop the Grade Level Assessment Tool in Social Science (GLAT-SS) for the Karnataka State Education Board's grades VII and VIII employing a survey design. The study's target population consisted of 29 schools spread across five districts in Karnataka. Purposive sampling technique was employed to select participants for the study. In the study, a total 866 typically developing children from five districts (Mysore, Chamarajnar, Mandya, Bengaluru & Kalaburagi) of Karnataka State participated. For the pilot study, 100 typically developing children participated and 766 typically developing children studying in Grade VII & VIII from five districts of Karnataka State participated in the final data collection, among them 263 students (154 English and 109 Kannada) were from Mysuru district; 82 students (English medium) were from Chamrajnagara district; 12 students (English medium) from Mandya district; and 32 students (25 English and 07 Kannada) were from Bengaluru district participated.

The final analysis and interpretations of results reveal that There is significant difference found in performance of Grade Level Assessment Test (GLAT-SS) in Social Science between Typically Developing students and students with Hearing Impairment grade VII & VIII students studying in English Medium as well as Kannada Medium.

KEYWORDS: Grade Level Assessment Tool in Social Science (GLAT-SS), Typically Developing Children, Children with Hearing Impairment and Karnataka State Education Board.

INTRODUCTION

Every grade level and subject's educational assessment assists in identifying areas that a child is struggling to comprehend and implement. Additionally, this aids in improving children required educational preparation. Grade level assessments will make it possible for parents and teachers to understand the students' academic progress and will help them determine what the students should learn next. A child might be talented too, it would be pointless and occasionally hazardous to educate such a child solely on information, if they are unable to fulfil their educational goals and act as responsible citizens in their community.

Social science is a unique and an important subject that aims to promote equality, democracy, liberty and plurality among children as mentioned in our constitution as responsible citizen of the country. Even though a child is talented, if he/she cannot achieve aims of education and be responsible citizens in the country, educating such a child merely on knowledge base would be futile and sometimes dangerous as well. Social sciences are essential to provide social, cultural and analytical skills required to adjust to an increasingly interdependent world, and to deal with political and economic realities (NCF, 2005). Hence it is significant to understand whether the child

has acquired these aims in general and specifically related to society through social science subject. National Focus Group on teaching of social sciences (2005) exposed few prevailing perceptions about social science subject: it is considered as a non-utility subject; it merely transmits information and is too text centered; it is viewed as providing unnecessary details about the past and students specializing in social sciences do not have desirable job options. But it is the subject which enables an individual to grow at his/her personal level, being a member of family; contributing member of society and promoting democratic, patriotic, historic values, cultural and heritage in the society where s/he lives. Therefore, studying this subject and gaining knowledge in this domain is a vital aspect for learning. Hence, there is a need to develop Grade Level Assessment Test in Social Science subject. On reviewing the tests, it was observed that there have been hardly any tests in India targeting evaluation of children at the Grade VII and VIII levels in social science subject as per Karnataka State Education Board. Moreover, the tests developed in other countries, most of them are not suitable for Indian conditions in general and for Karnataka in specific as they are culturally inappropriate especially in terms of subject like social sciences. Consequently, assessment tests for upper primary grades in

social sciences subject and compatible for are hardly available. Therefore, in this context there is a dire need to develop such grade assessment test materials to promote meaningful social sciences and would be possible to train the child appropriately. Thus, the current study is aimed to prepare a test tool to assess grade level performance in children in social sciences.

Aim of the Study

To develop Grade Level Assessment Tool in social Science (GLAT-SS) for Grade VII and VIII of Karnataka State Education Board in both English and Kannada languages for Typically Developing Children and children with hearing impairment.

Objectives of the Study

1. To develop curricula-based grade level assessment test for social science subject for grade VII & VIII based on the recently upgraded syllabus of Karnataka State Education Board.
2. To examine the performance of Typically Developing Children and Children with Hearing Impairment of VII Standard studying in English medium & Kannada medium.
3. To examine the performance of Typically Developing Children and Children with Hearing Impairment of VIII Standard studying in English medium and Kannada medium.

Hypotheses of the Study

1. There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and Children with Hearing Impairment of VII Standard studying in English medium.
2. There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and Children with Hearing Impairment of VIII Standard studying in English medium.
3. There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and Children with Hearing Impairment of VII Standard studying in Kannada medium.
4. There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and Children with Hearing Impairment of VIII Standard studying in Kannada medium.

Operational Definitions

Grade: In this study refers to different grade VII and VIII in the school educational system in India.

Assessment test: In this study refers to academic achievement test based on syllabus of Karnataka state education board at grade VII and VIII.

In this study refers to children with hearing impairment clinically diagnosed with hearing impairment.

METHOD

The present study was aimed to develop a tool for assessment in social science subject for Grade VII & VIII, Grade Level Assessment Tool – Social Sciences (GLAT-SS) in Karnataka. The study was conducted in two stages. A survey research approach was used to investigate the objectives and to test the hypotheses of the present study. The purpose of the survey aimed to compare the performance level in GLAT-SS among Typically Developing Children and Children with Hearing Impairment of VII & VIII grade. The study involved a total of 866 students who were Typically Developing Children. For the pilot study 100 Typically Developing Children participated, among them 50 students (25 English and 25 Kannada) were from grade VII and 50 (25 English and 25 Kannada) were from grade VIII. 100 Typically Developing Children in grade VII and VIII (50 in Kannada and 50 in English) from Mysuru district participated. 389 Typically Developing Children studying in grade VII from four districts of Karnataka participated in the final data collection, among them 263 students (154 English and 109 Kannada) were from Mysuru district; 82 students (English medium) were from Chamarajanagar district; 12 students (English medium) from Mandya district; and 32 students (25 English and 07 Kannada) were from Bengaluru district participated. 377 Typically Developing Children students studying in grade VIII from five districts of Karnataka participated in the final data collection, among them 281 students (174 English and 107 Kannada) were from Mysuru district; 38 students (12 English and 26 Kannada) were from Chamarajanagar district; 18 students (Kannada medium) were from Mandya district; 07 students (Kannada medium) were from Kalaburagi district and 33 students (21 English and 12 Kannada) were from Bengaluru district.

All the Typically Developing Children have met the following Inclusion criteria.

1. Students studying in Karnataka State Education Board.
2. Students studying in regular schools.
3. Medium of instruction: English and Kannada (Separately).
4. Currently studying in grade VII and VIII.

All the children with hearing impairment have met the following Inclusion criteria.

1. Students studying in Karnataka State Education Board.
2. Students studying in special schools.
3. Medium of instruction: English and Kannada (Separately).
4. Currently studying in grade VII and VIII.

Additionally, they also fit into exclusion requirements, such as having no known disabilities or impairments. This is in accordance with data gathered from teachers and administrators.

Procedure of the Study

The study was carried out in four stages, each with sub-stages. The initial phase contained of The Construction of Test Items, second stage included the Pilot Study, third stage included Final Field Study of and the last stage included Determining Norms, validity and Reliability of the Test Materials. GLAT-

SS VII and VIII test tools were administered on Typically Developing Children students in English and Kannada medium schools across five districts of Karnataka and final compilation of GLAT-SS VII and VIII

Stage 1: Construction of Test Items

Step 1: Review of Social Science Subject Karnataka State Textbooks of Grade VII and VIII

The Block Resource Centre in Mysore provided the social sciences textbooks for grades VII and VIII in the state of Karnataka. To select appropriate test items VII & VIII text book lessons were referred.

Step 2: Construction of Test Items

The test items have been compiled from various lessons based on the importance of the lessons' material. Different types of test items from the social science subject were compiled to assess the levels of cognitive domain (Remember, Understand, Apply and Analyse) among students of grade VII and VIII. The GLAT-SS Assessment Tool's initial draft was developed in English and Kannada, consisting of total 100 test items.

Step 3: Content Validation

Validate GLAT – SS test tool, 35 experts were provided with a draft of the GLAT-SS for grade VII and VIII in both English and Kannada to gather their feedback and inputs. Total 17 experts have assessed the VII grade test tool, among them 6 general educators (3 Kannada and 3 English) and 11 were special educators (6 Kannada and 5 English). 18 experts have assessed the VIII grade test tool, among them 6 general educators (3 Kannada and 3 English) and 12 (6 Kannada and 6 English) special educators. (Annexure 2: consolidated validation report to be attached).

Step 4: Modifications and Finalization of Draft

Test items that received appropriate ratings from all of the experts were retained, whereas test items that received inappropriate ratings were removed. Additional pertinent recommendations made for the study were also considered and incorporated. Subsequently, after content validation, 20 test items out of the 100 test items in the initial draft of the GLAT-SS for grade VII and VIII were eliminated, and the second draft of the test tool GLAT-SS for grade VII and VIII was compiled with 80 test items.

Stage 2: Pilot study

Step 1: Pilot study with Typically Developing Children samples. Following the incorporation of the expert's recommendations, the second draft of the GLAT-SS for grade VII and VIII was tested in the field on 100 Typically Developing Children students in the Mysore District, among them 50 VII students (25 Kannada and 25 English) and 50 VIII students (25 Kannada and 25 English) had participated.

Step 2: Determining difficulty and discriminatory indices.

For the purpose of determining difficulty and discriminatory indices of each test item, established reliability using test-retest method. Statistical analysis revealed that there was high correlation in the test and re-test (Annexure – 3: Statistical

analysis result to be attached).

Step 3: Rejection of test items having extreme indices

The test items that received responses from more than 70% of students were retained, whereas the other test items were eliminated.

Step 4: Incorporation of other necessary modifications

During pilot administration to eliminate ambiguities and difficulties was observed. The GLAT - SS for grades VII and VIII was further modified with 80 items based on the obtained results which lead to the final draft of the GLAT - SS.

Stage 3: Final field study

Step 1: Administration of test to Typically Developing Children Final GLAT- SS tool for grade VII and VIII was administered on a total 614 Typically Developing Children, among them 333 students were of grade VII (236 English and 97 Kannada) and 281 students were of grade VIII (174 English and 107 Kannada) from regular schools across two districts (Chamarajanagar and Mysuru) of Karnataka .

Step 2: Administration of test to

Final GLAT- SS for grade VII and VIII was administered on a total 152 Typically Developing Children students, among them 56 students were of grade VII (37 English and 19 Kannada) and 96 students were of grade VIII (33 English and 63 Kannada) from special schools across five districts (Chamarajanagar, Mysuru, Mandya, Bengaluru and Kalaburagi) of Karnataka

Stage 4: Determining norms, validity, and reliability of the test materials

Step 1: Determination of norms for the developed grade level assessment test

Based on the obtained scores, range of scores below average, average and above average for GLAT-SS for grade VII and VIII were compiled.

Step 2: Verification of the Validity

Following measures were followed to establish validity of GLAT-SS

Construct Validity: The test items were identified into major domains and the correlation between the domains and the overall performance (above 70% or above was taken) of the test was computed.

Criterion Validity: In order to compare the performances of learners who have completed a particular grade with those places in a lower grade and higher grades 50 students from grade VI, 50 students from grade VII and 50 students from IX grade, two districts (Mysuru and Chamarajanagar) were considered for criterion validity.

Step 3: Verification of the reliability.

Equivalence between different evaluators: For the purpose of establishing inter-rater reliability, sample test was correlated by two evaluators and was correlated.

Internal Consistency: To check internal consistency, the scores of all odd items was correlated with the sum of scores in even items of each Typically Developing Children.

Step 4: Comparison of performances of Typically Developing Children and children with hearing impairment

RESULTS & DISCUSSION

The collected data is statistically examined to see the effect of the Grade Level Assessment Tool (GLAT-SS) on grades VII and VIII in the subject of social science. The findings are presented in order to make generalizations about the study population. The findings of the Shapiro-Wilks test and Kolmogorov-Smirnov, which are used to determine if the data is normally distributed (i.e., $p < 0.05$), showed that the GLAT-SS total score data does not follow a normal distribution. Since the GLAT-SS total score data does not follow a normal distribution, the non-parametric test; Mann Whitney – U was employed in the study to test the hypotheses. The significance levels of 0.05 and 0.01 were used to compare all statistical significance values. The analysis is performed via the SPSS software.

Mean Achievement Scores of VII & VIII Grade Typically developing students and Students with hearing impairment.

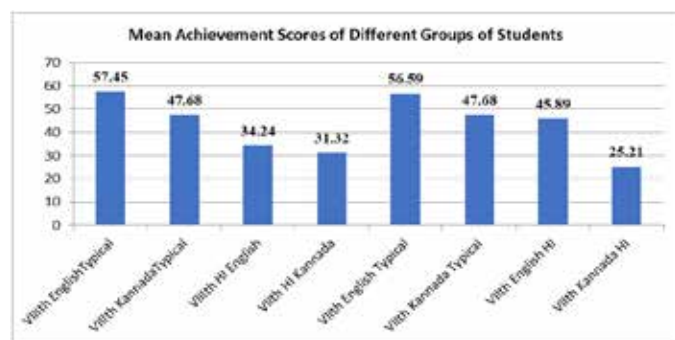


Figure 1: Mean Achievement Scores of VII & VIII Grade Students from Regular Schools and Special Schools

Performance of Students from Different Groups on the Social Science Grade-Level Assessment

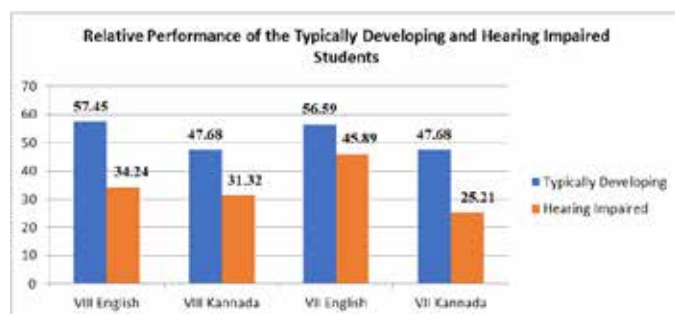


Figure 2: Relative Performance of the Typically Developing Children and Children with Hearing Impairment

The Performance of the Grade Level Assessment Tool in Social Science (GLAT-SS) on Grades VII & VIII with the total number of participants, are also graphically represented in Figure 2.

The study had two groups of children drawn from the population VII and VIII standards. Hence, two separate hypotheses were formulated as given below for them to be tested using non-parametric methods of hypotheses testing.

Significance of difference in 'Mean GLAT-SS Score' of children studying through English and Kannada medium.

The data were further regrouped based on the medium of instruction. Following hypotheses were formulated for testing their significance using non-parametric statistical procedures. The hypotheses and the obtained results of significance testing and their interpretation are given below.

Hypothesis 1: There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and Children with Hearing Impairment of VII Standard studying in English medium.

Groups	N	Mean Rank	Mann-Whitney -U	Asymp. Sig. (2-tailed)	Results
VII Typically Developing Children (Eng.)	236	146.61	2.098E3	0.000	Null Hypothesis Rejected (Significant at 0.05 level)
VII children with hearing impaired (Eng.)	37	75.70			

Table No 1: Mann Whitney – U test between VII Typically Developing Children and children with hearing impaired studying in English Medium on GLAT-SS scores

Results of the Mann-Whitney U test reveal that the null hypothesis is rejected at 0.05 level of significance. In other words, the Typically Developing Children and children with hearing impaired English medium students of VII standard differ significantly in their mean grade level assessment scores in social science as presented in table 1.

Hypothesis 2: There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically between VII Typically Developing Children and Children with Hearing Impairment studying in Kannada Medium

Significance of Difference between Mean Performance of Typically Developing Children and Children with Hearing Impaired of VII Standard					
Groups	N	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)	Result
VII Kannada Typical	97	66.47	148.500	.000	Null Hypothesis Rejected
VII Kannada HI	19	17.82			

Table No 2: Mann Whitney – U test between VII Typically Developing Children and children with hearing impaired studying in Kannada Medium on GLAT-SS scores

Table 2 indicates, Results of the Mann-Whitney U test reveals that the null hypothesis is rejected at 0.05 level of significance. In other words, the Typically Developing Children and children with hearing impaired Kannada medium students of VII standard differ significantly in their mean grade level assessment tool (GLAT) scores in social science.

Hypothesis 3: There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and children with hearing

impaired of VIII Standard studying in English medium.

Hypothesis 3: There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and children with hearing impaired of VIII Standard studying in English medium.

Groups	N	Mean Rank	Mann Whitney -U	Asymp. Sig. (2-tailed)	Results
VIII Typically Developing Children (Eng)	200	129.17	865.500	0.000	Null Hypothesis Rejected (Significant at 0.05 level)
VIII children with hearing impaired (Eng)	33	43.23			

Table No 3: Mann Whitney – U test between VIII Typically Developing Children and children with hearing impaired studying in English Medium on GLAT-SS scores

Results of the Mann-Whitney U test reveal that the null hypothesis is rejected at .05 level of significance. In other words, the Typically Developing Children and children with hearing impairment English medium students of VIII standard differ significantly in their mean grade level assessment scores in social science as presented in table 3.

Hypothesis 4: There is no significant difference in Mean Grade Level Assessment Test Score in Social Science (GLAT-SS) of Typically Developing Children and Children with Hearing Impairment of VIII Standard studying in Kannada medium.

Groups	N	Mean Rank	Mann Whitney -U	Asymp. Sig. (2-tailed)	Results
VIII Typically Developing Children (Kan)	81	94.98	731.000	0.000	Null Hypothesis Rejected (Significant at 0.05 level)
VIII children with hearing impaired (Kan)	63	43.60			

Table No 4: Mann Whitney – U test between VIII Typically Developing Children and children with hearing impaired studying in Kannada Medium on GLAT-SS scores

Table 4 delineates, Results of the Mann-Whitney U test reveals that the null hypothesis is rejected at .05 level of significance. In other words, the Typically Developing Children and children with hearing impaired Kannada medium students of VIII standard differ significantly in their mean grade level assessment scores in social science.

CONCLUSION

The Grade Level Assessment tool (GLAT-SS) was developed to assess students' educational level in social sciences subjects as per the Karnataka State Education Board in Grade VII and Grade VIII so that remedial measures can be taken up appropriately. It is especially useful for those students who are scholastically backward in social science subjects. This tool considers the content of Grade VII and Grade VIII in Karnataka, and items were selected from the existing textbook with utmost care to enable a representative sample of content for testing. Also, it is easy for teachers to use the tool. GLAT-SS saves the teachers' time in constructing teacher-made tests in social sciences subject in Karnataka. It can be used by the teachers in identifying challenges faced by students in social science subjects for Grade VII and Grade VIII in Karnataka for

both English and Kannada medium students.

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